THE FALLACY OF HIGH PRICES

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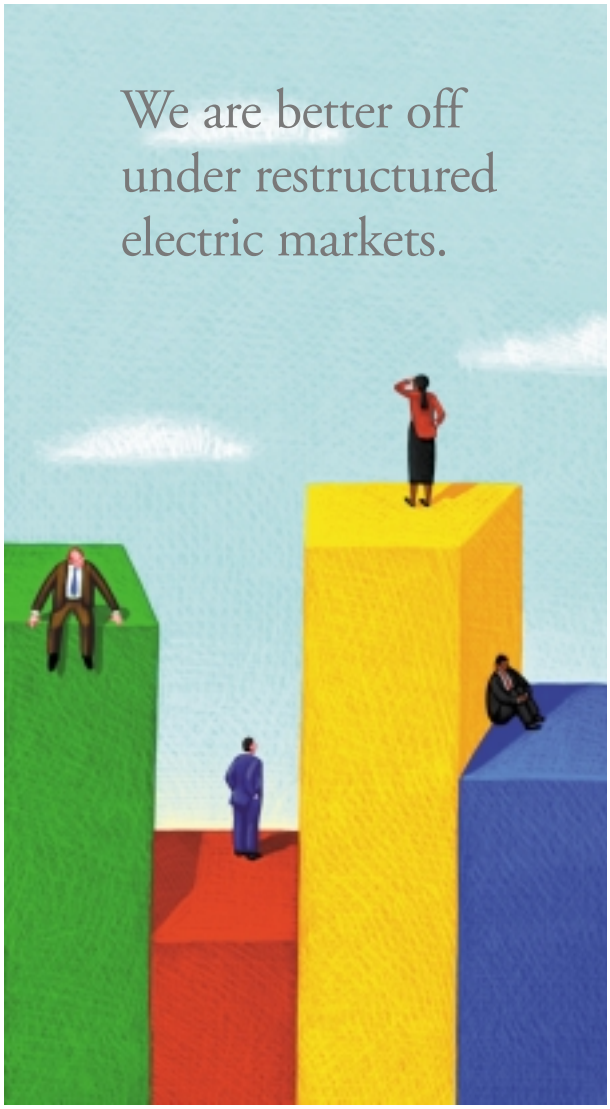


Since the Federal Energy Regulatory Commission (FERC) first issued Order 888[1] more than a decade ago, the restructuring of electricity markets, both at the wholesale and retail level, has provided significant benefits to electricity customers. Unfortunately, rising retail electricity rates, resulting from sharp increases in fuel prices and, in restructured states, the end of years of artificially capped rates, have caused consternation among consumers, which in turn has raised the ire of politicians, some of whom are demanding a return to traditional models of rate-of-return regulation.

Yet, despite the headlines, our research—and that of several others—has shown that wholesale competition has been successful, especially in markets in the eastern United States, and will foster lower, more stable electric prices over the long term than a retreat to traditional rate regulation.

How can this assertion be reconciled with recent rapid increases in electricity prices, particularly in areas of the country where restructuring has been implemented? The answer is that consumers, politicians, and even some regulators have focused far too much on the shorter-term independent system operator (ISO) market-clearing prices and not enough on portfolio-derived prices and long-term trends. Just as one day's change in the stock market should not be the basis of a comprehensive investment strategy, short-term price increases brought about by unprecedented increases in the prices of fossil fuels, as well as the removal of price caps that kept retail electric rates at unsustainably and artificially low levels for years, do not negate the real benefits that wholesale competition has provided.

Analyzing the benefits of competitive electricity markets is a challenging exercise, not because the benefits are small but

because the restructuring process in this industry has been so complex, and because rate caps and changing fuel prices obscure the effects of increased competition. Restructuring efforts undertaken in different states and regions were disjointed, applied to different ratepayers at different times, and were fraught with negotiating and horse-trading over rate discounts, stranded cost recovery, transition periods and so forth. Rate caps and discounts kept retail prices low for varying periods of time, while wholesale prices followed volatile fuel prices. In some states, rate caps ended just as fuel prices were rising to unprecedented levels.

Considering the recent sharp increases in retail electric rates, it is little wonder that many individuals have questioned the benefits of competition. To the average ratepayer in states that undertook restructuring, and to many a policymaker in those states who has failed to appreciate the meaning of a rate freeze, it must indeed seem that competition has been the cause of recent rate increases. As discussed further below, such a simplistic assessment of the performance of competitive electricity markets is bound to produce spurious conclusions. Any reasonable analysis must account for both fuel prices and rate caps, and must examine more direct measures of how the electricity industry has been affected by greater competition.

Pay Now or Pay Later

The process of industry restructuring was not a magic wand that, once waived, instantly lowered electricity prices, although that appears to have been the expectation of at least some policymakers prior to the California crisis of 2000-2001. The price reductions that were achieved in some states immediately after restructuring generally were the result of settlement agreements among policymakers, market participants, and other parties; they were not themselves market prices. Indeed, short of a sudden drop in fuel prices, how could a move to competitive wholesale electricity markets result in an instant reduction in rates? Generally, one would not expect substantial rate reductions attributable to efficiency gains to occur immediately, but over a longer time horizon.

It is therefore all the more surprising, and encouraging, that in the relatively short time since electricity market restructuring has occurred, a number of tangible benefits have been realized. First, competition significantly increased efficiencies in the construction and operation of power plants. Since 1996, when restructuring was effectively initiated by passage of the Energy Policy Act, refueling outage times at nuclear power plants decreased dramatically, while operation and maintenance (O&M) expenses were lowered and capacity factors increased. Similarly, heat rates and capacity factors improved at coal-fired plants while O&M costs declined.[2] Average per-unit production costs, or procurement costs in states with competitive procurement, declined 1.1 percent per year between 2001 and 2004. In 2005, when oil prices increased 135 percent and natural-gas prices rose 210 percent, production/procurement costs rose only 5.6 percent.[3] Indeed, if restructured states had used the fuel-cost adjustment pass-throughs common in states with traditional rate regulation, rates would have been 15 percent higher.[4]

Second, competition has increased access to lower-cost generation, particularly in the organized markets. Numerous studies have documented this impact, with some studies finding as much as $15 billion in savings in the Eastern Interconnection.[5] Finally, competition has played an important role in shifting significant risks away from captive customers and on to those market participants best equipped to manage those risks—including the risks associated with cost overruns of new construction and risks of economic depreciation. Our studies have found that since restructuring began in the Northeast, the standard deviation of production costs, a measure of price volatility, has declined by 30 percent.[6] This finding is consistent with the observed volatility of real-time clearing prices, as the production costs we evaluated included a portfolio of both short- and long-term physical contracts as well as the financial instruments employed to mitigate market uncertainty.

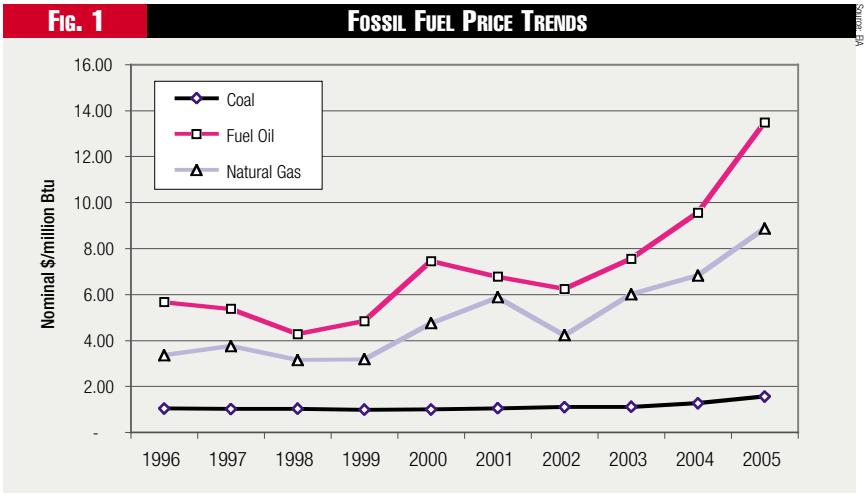
The path leading to these benefits of restructuring has been far from smooth. In fact, the development of robust competition in the electricity industry arguably has been delayed by numerous transition mechanisms imposed by regulators and politicians. Those mechanisms, especially multi-year price caps that "guaranteed" consumer savings, provided at best a temporary protection as world energy prices continued to rise. Moreover, those price caps, however well-intentioned, prevented consumers from gradually adjusting to market fluctuations typical of any industry. Not surprisingly, as if a dam burst, the end of those price caps, coupled with the sharp increases in fuel prices, has led to large price increases.

Market Timing

One of the difficulties in demonstrating the benefits of wholesale competition today is the high cost of fossil fuels, especially natural gas. In fact, the impetus for retail electric competition was, in large measure, low fossil fuel prices: Large commercial and industrial customers, in particular, sought to avoid paying higher rates based on utilities' embedded costs by gaining access to low-cost, gas-fired generation.

As the saying goes, "timing is everything." The gas glut of the 1990s, coupled with an inability to build any other type of generation because of environmental opposition in the Northeast, led to an increased reliance on new gas-fired »

FIG. 1 FOSSIL FUEL PRICE TRENDS



Note: EIA historical fuel price data. Fuel oil is No. 2 distillate. Natural gas is city gate price. Coal is bituminous coal.

generation to meet growing electric demand. When gas prices shot up beginning in 2002, so did wholesale market prices. Yet, despite the large fuel price increases, the data reveal that there have been tangible benefits from wholesale competition.

Fig. 1 presents fossil fuel trends between 1996 and 2005. Natural-gas prices (city gate) remained below $4.00/MMBtu through 1999 and have been above that level since, with a rapid rise to near $9.00/MMBtu in 2005.[7] Fuel oil prices have followed a similar pattern, reaching above $13.00/MMBtu in 2005. Coal prices, while rising far less than either oil or natural gas, have nevertheless increased steadily since 2000.[8] Higher fossil-fuel prices have translated to an increase in wholesale electric prices. For example, in PJM, wholesale electric prices rose from about $30/MWh in 1999 to above $60/MWh in 2005.

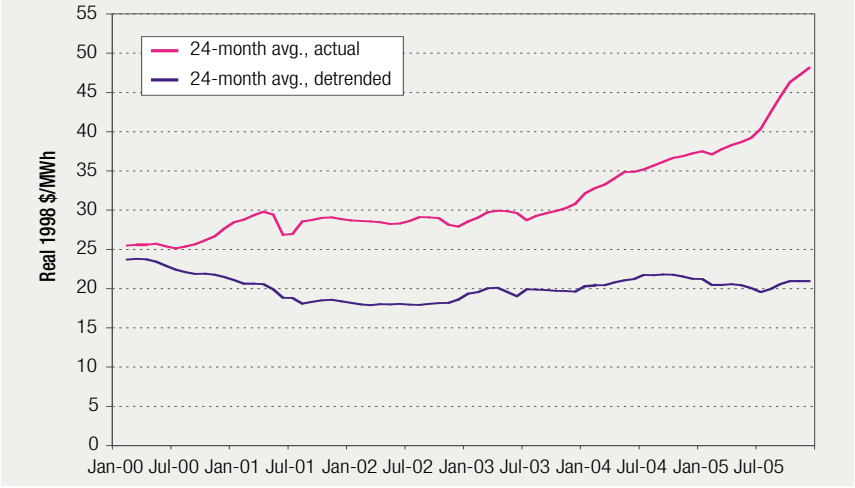
Yet, despite that increase in electricity prices, competition has wrung out significant benefits. Consider Fig. 2, which compares actual rolling 24-month average prices in PJM (adjusted for inflation) and prices "de-trended" to remove the impacts of higher fossil-fuel prices. (The de-trending analysis also controls for the effects of generation capacity reserve margin, peak demand, and extreme summer weather.) Wholesale electricity prices excluding the effects of fuel cost have decreased significantly since the inception of the PJM wholesale market in 1998. The average de-trended price for the last 24 months of the data period is 9 percent lower than that for the first 24 months. The restructuring process effectively has motivated power suppliers, now faced with the full force of competition, to operate far more efficiently.

To address possible arguments that an over-supply of generation caused these de-trended price decreases, our analysis also controlled for the impact of increasing generation capacity. Moreover, even if we had not controlled for this effect, if energy prices were indeed depressed by oversupply—*i.e.*, by the inability of some generators to sell at prices that covered their fully allocated costs, plus a return—this outcome nevertheless represents a dramatic change that is unequivocally a benefit of competition. Just as increased supply benefits consumers in other markets—whether groceries or automobiles—aggressive competition in the construction of new generation has been a boon for electricity consumers.

Under the model of traditional rate regulation, the full cost of investments, plus a return, are passed directly to consumers, with few exceptions. If electricity prices are lower because some producers are absorbing losses, this is a striking confirmation that, under competition, a significant component of long-term risk has been shifted away from consumers.

Our research provides several other important conclusions. First, fuel prices are pushing up electric rates everywhere. Customers, whether in restructured or non-restructured states, are seeing higher electric prices. In some cases, the end of artificial price caps is resulting in higher competitive procurement costs. In other states, fuel pass-throughs are resulting in increased

FIG. 2 ACTUAL AND DE-TRENDED WHOLESALE ELECTRICITY PRICES IN PJM

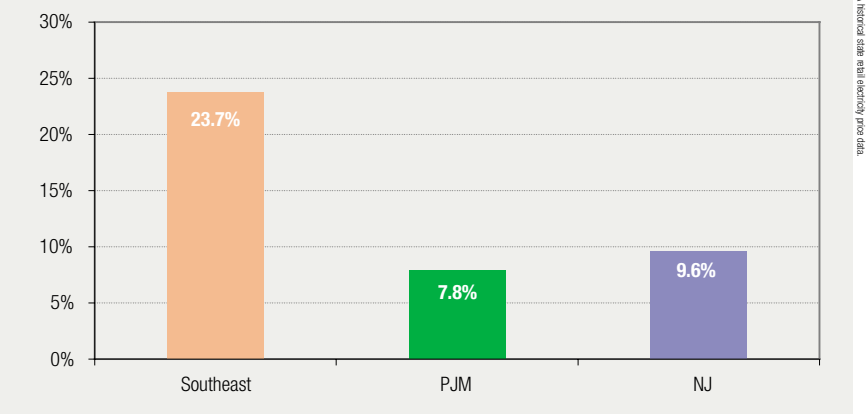


Source: Bates White analysis based on PJM hourly real-time energy prices and loads, historical generation capacity, and fuel prices.

rates. Either way, customers are paying more for electricity. One recent study focusing on non-restructured states showed that customers in Louisiana have seen a 47 percent increase in electricity costs while customers in Oklahoma have seen a 38 percent increase.[9]

Perhaps even more interesting has been the effect of competition on regional price differentials. While a number of important factors—including fuel mix, labor costs, taxes, and cost of living—drive regional electricity prices, the gap between the PJM area, traditionally a high-cost area, and the Southeast, traditionally a low-cost area, has been shrinking. Our research shows that retail rates in five Southeastern states[10] rose 23.7 percent from 1998 to 2005, while rates in four "classic" PJM states[11] rose only 7.8 percent over that same period.[12] The 7.8 percent increase for the PJM states reflects continued rate caps for some customers in 2005, but the corresponding increase for New Jersey, which has had retail electricity rates set competitively since 2003, was just 9.6 percent (*see Fig. 3*).

FIG. 3 CHANGE IN AGGREGATE RETAIL ELECTRICITY RATES, 1998-2005



Source: EIA historical state retail electricity price data.

There are limits to how far one can extend such a comparative analysis of rates across different regions of the country. For example, the state of Maryland recently was engulfed in a significant political controversy when bids to provide standard-offer service to Baltimore Gas & Electric (BG&E) residential customers were 72 percent higher than the then current retail rates, which had been frozen since 1999 at a 6.5 percent discount to rates in effect since 1993. Obviously, if one were to compare Maryland's retail electric prices with prices in the Pacific Northwest (PNW), one would observe that PNW retail prices are significantly lower. Does that prove that there are not any benefits from competition? The answer is clearly no, since prices in the PNW reflect abundant, federally subsidized hydroelectric capacity not available in Maryland, which makes direct price comparisons between the two regions irrelevant and misleading.

To account for the difficulties inherent in a cross-regional comparison, we performed an econometric analysis of the effects of competition over a broad cross-section of the United States, using data for the years 1980 through 2004 for all states east of the Mississippi to estimate the effects of wholesale competition and state restructuring on the retail cost of electricity. We controlled for a number of factors influencing electricity prices, including generation mix, concentration of independent power producers, and capital costs. This specification of an econometric model allows us to derive a preliminary estimate of the benefits of wholesale competition and retail access, controlling for differences in fuel mix and other factors. Again, it is our view that a more robust estimate of the benefits of competition will require additional time, as many of the benefits of competition are inherently long-term in nature. Nevertheless, despite the relatively short time period since electricity restructuring was implemented, our econometric analysis indicates that the introduction of wholesale competition has resulted in an average reduction in the price of electricity by $6.50/MWh for all retail customers. Considering Maryland alone, as the state in which recent price increases arguably have caused the most political controversy, our analysis shows that the benefits of wholesale competition to Maryland consumers are more than $300 million per year.

Risk and Reward

Another benefit of wholesale competition has been the shift of significant risks from consumers to power producers. Prior to restructuring, if a regulated utility built too much generation (surplus capacity), most if not all of the costs would have been passed through to consumers. However, with a competitive wholesale market and competitive procurements by regulated distribution utilities—such as auctions for provider of last resort (POLR) or standard offer service (SOS)—significant risks are shifted away from captive customers to other market participants with the incentives and ability to assess and manage those risks. In particular, developers of new generation capacity assume the risk associated with that project coming in on time and on budget. In such a scenario, cost overruns and delays cannot simply be shifted to captive ratepayers as frequently occurs when incumbent utilities pursue "self-build" strategies under traditional cost-of-service rate regulation. In a competitive market, only those developers that can appropriately assess and manage the risks associated

with building new capacity are able to earn a profit and attract capital; those who cannot are eventually forced to exit the market. Likewise, with a load auction for POLR service, wholesale suppliers can better insulate utility customers from fuel and purchased-power price risks, which otherwise would be passed through to customers along with the risks of capacity development. Such risk transfers stimulate new market entry and help drive down the ultimate costs to consumers.

A "Free" Market

In the event that it is not by now painfully obvious, competition is not a guarantee of low electricity prices. Rather, competition is a means for efficiently allocating scarce resources, sending appropriate price signals to guide investment and consumption decisions, and providing incentives for various market participants to act in ways that maximize social welfare. In a market economy, the main economic rationale for applying traditional rate-of-return regulation to any industry is in the case of a "natural monopoly," in which a good or service is provided most efficiently by a single firm. This characterization may apply to certain aspects of electricity transmission and distribution, but certainly does not apply to electricity generation. It is this contention, which we support strongly, that justifies efforts to restructure electricity markets.

We do not argue, however, that policymakers simply leave consumers, utilities, and other market participants to their own devices, even beyond the initial transitional phase of the restructuring process. Clearly, there needs to be a sufficient number of market participants or sufficiently low barriers to entry such that a market is likely to result in competitive prices and output rather than monopoly prices. Furthermore, we are strong proponents of institutional arrangements that monitor the behavior of market participants, enforce well-defined market rules, and ensure that the preconditions for competitive markets exist. Appropriate market rules and procedures should align market participants' incentives with broader policy goals of increasing efficiency, encouraging the appropriate amount and type of investment, and ultimately lead to reduced prices—and price volatility—for consumers.[13]

Our evidence shows that there have been significant benefits from electricity restructuring in the relatively short time since implementation. Not only has restructuring lowered wholesale and retail prices, it also has shifted significant risks away from customers to generators, which are better able to address those risks. There is no doubt that restructuring remains a work in progress, and that the transition to competition has had its painful moments. However, wholesale and retail competition should not be condemned based on the unprecedented increases in fossil fuel prices or rate shocks that were caused by political and regulatory pressures to guarantee benefits from day one.

Ultimately, for the full benefits of electric competition to be realized, the regulatory environment needs to become less politicized. Abrupt reactions to short-term circumstances, such as proposals for a return to traditional utility regulation, not only impede a rationale resolution of the challenges faced by policymakers and regulators, but also hurt ratepayers directly by creating uncertainty and increasing perceived investment risks, which ultimately lead to increased borrowing costs and higher rates. Given the volatility and uncertainty in fossil-fuel markets created by the conflicts in the Middle East and increasing demand in Asia, as well as uncertainty as to the ultimate policy resolution of important environmental issues such as climate change and mercury control, the last thing ratepayers need is to have politicized electricity markets. F

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Endnotes

1. Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, Final Rule, April 24, 1996.
2. Putting Competitive Power Markets to the Test, Global Energy Decisions, 2005.
3. Based on research performed by Dr. Axelrod using the inflation adjusted weighted per unit production costs (FERC Form 1 data) for a sample set of Northeast utilities representing the PJM/NY/NE-ISOs structured markets.
4. Dr. Axelrod found when projecting 2004 Energy Information Administration (EIA) statewide electric price data for the Northeast using actual fuel price increases during 2005, as if fuel-related expenses were automatically flowed through, production costs would have been 15 percent higher than actual production costs as reported in the FERC Form 1 for 2005.
5. GED and PJM, ISO-NE, and NY-ISO State of the Market Reports.
6. Dr. Axelrod's analysis also found that the average standard deviation for the weighted production costs for the Northeast sample set was 0.45 percent for the pre-restructured period, 1996-2000, and 0.32 percent for the structured period 2000-2005.
7. Note that the natural-gas prices spiked following hurricanes Rita and Katrina at the end of 2005, with the average city gate price for October 2005 reaching above $12/MMBtu.
8. The coal-price series represents a national average including long-term contract prices. Spot prices have risen to a much greater extent than indicated. The spot price for Central Appalachian coal was above $60/ton, or $2.40/MMBtu, for most of 2005.
9. Electricity and Underlying Fuel Costs, Analysis Group, 2006.
10. Alabama, Georgia, Louisiana, Mississippi and South Carolina.
11. Delaware, Maryland, New Jersey and Pennsylvania.
12. Analysis based on EIA data.
13. While far from perfect, the best institutional arrangement devised to date to facilitate the development of electricity markets is the ISO/RTO framework, of which PJM arguably has been one of the best examples. It is thus all the more surprising—and rather alarming—to hear policymakers within PJM itself increasingly expressing opposition to electricity restructuring and competitive electric markets.